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EX PARTE

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW, Room 222
Washington, DC 20554

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MAY 15 1996

RE: Telephone Number Portability (CC Docket No. 95-116)

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Dear Mr. Caton:

On Wednesday, May 15, 1996, Varsha Clare, Paula Jordan, Donna Bethea and I, on behalf of AirTouch Communications, Inc. met with Geraldine Matise, Mary DeLuca, Andy Furth, Pam Gregory, Anne Bisese, Gregory Forbes, Herb Newmann, and Richard Cameron of the Network Services Division of the Common Carrier Bureau to discuss the above proceeding. Please associate the attached material with the above-referenced proceeding.

Two copies of this notice are being submitted to the Secretary in accordance with Section 1.1206(a)(1) of the Commission's Rules.

Please stamp and return the provided copy to confirm your receipt. Please contact me at 202-293-4960 should you have any questions or require additional information concerning this matter.

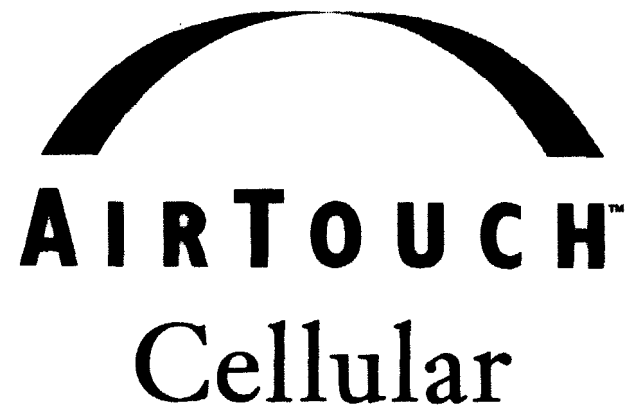
Sincerely,

Kathleen Q. Abernathy

Attachment

cc: Anne Bisese
Richard Cameron
Mary DeLuca
Andy Furth
Gregory Forbes
Pam Gregory
Geraldine Matise
Herb Newmann

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Number Portability

Varsha Clare

**Director, Systems Development
Advanced Technology
May 15, 1996**

Number Portability

- **Concept and Definitions**
- **Federal, State & Industry Initiatives**
- **Proposed Wireline Solutions**
- **Impact on Wireless Networks**
- **Conclusions**

What is Number Portability

- **Number Portability refers to the ability of end users to retain their geographic or non-geographic telephone number when they change any of the following:**
 - Their location (Location Portability)
 - Their service provider (Service Provider Portability)
 - Their service (Service Portability)

Types of Number Portability

■ Location Portability

- The ability of an end user to retain the same geographic or non-geographic telephone number (NANP number) as he/she moves from one permanent physical location to another. Location Portability will involve either of the following scenarios:
 - New permanent physical location is within the same serving wireline central office area.
 - New permanent physical location is within a different serving wireline central office or wireless serving area.

■ Service Provider Portability

- The ability of an end user to retain the same geographic or non-geographic telephone number (NANP number) as he/she changes from one service provider to another.

■ Service Portability

- The ability of an end user to retain the same geographic or non-geographic telephone number (NANP number) as he/she changes from one type of service to another (e.g., POTS to ISDN).

Number Portability - Examples

- **Three basic types of Number Portability may be combined to create various scenarios, for example:**
 - Customer moves from Los Angeles to New York and changes service from MFS to MCI.
 - An example of Location and Service Provider Portability
 - Customer moves from Dallas to Chicago, changes service from Southwestern Bell to AT&T and goes from 1FR class of service to ISDN.
 - An example of Location, Service Provider and Service Portability

Federal, State & Industry Initiatives

■ Federal Initiatives

- Notice of proposed rule making (NPRM) 95-116 issued June 1995.

■ State Initiatives

- Various states have started Number Portability proceedings.
- Only Local Service Provider Number Portability is under consideration.
- New local exchange entrants must match current rate centers.
- Illinois and Georgia have already selected their long-term solution.

■ Industry Numbering Committee (INC) Initiatives

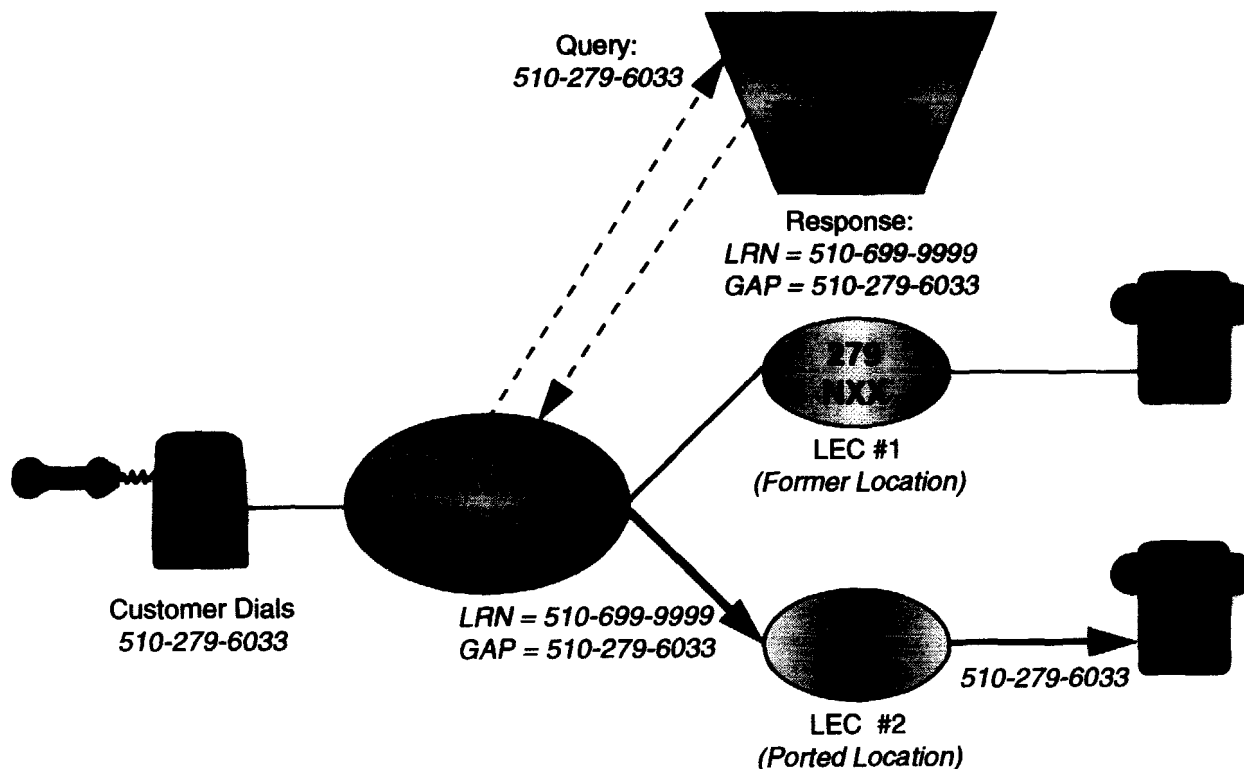
- Number Portability Report due July 1996.
 - Report expected to include technical proposals and impact analysis, but will not include a recommended solution.

Proposed Wireline Solutions

- **Five proposals have been submitted and discussed**
 - Location Routing Number (LRN) - AT&T
 - Local Area Number Portability (LANP) - US Intelco
 - Carrier Portability Code (CPC) - MCI
 - Non-Geographic Number - GTE
 - Query on Release (QOR) - Pacific Bell
- **Location Routing Number proposal is receiving wide acceptance in both State Number Portability proceedings and the Industry Forums.**

Location Routing Number (LRN) - AT&T Proposal

- Each end office is assigned a unique 10-digit number (Location Routing Number -LRN) to which calls can be routed.
- Regional Local Number Portability database is created that maintains translation of ported numbers to the end office LRN.



LEC = Local Exchange Carrier
LRN = Location Routing Number
GAP = Generic Address Parameter

Call Routing Scenario

1. Customer dials 510-279-6033 (ported number)
2. Call routed through PSTN
PSTN switch recognizes NXX 279 has "ported numbers"
3. PSTN switch launches a query to Local Number Portability Database
4. Query result:
Location Routing Number (LRN) = 510-699-9999
Generic Address Parameter (Called number) = 510-279-6033
5. Call is routed through PSTN to 510-699-9999
6. 699 NXX switch recognizes call destination and routes call to the customer

Proposed Wireline Solutions, continued

■ US Intelco

- Local Area Number Portability (LANP)
 - Each ported subscriber is assigned two ten-digit numbers - one known as the network node address (to be used for routing) and other is known as the customer number address (ported number).

■ MCI

- Carrier Portability Code (CPC)
 - Each local service provider is assigned a unique three-digit Carrier Portability Code which is stored with the directory number of the subscriber and replaces the NPA for call routing purposes.

■ GTE

- Non-Geographic Number
 - The ported subscriber is assigned a non-geographic number which never changes that is associated with a geographic number that does change as the customer changes service, location or service provider.

■ Pacific Bell

- Query on Release (QOR)
 - Database dip performed only if called number is ported.

Impact on Wireless Networks

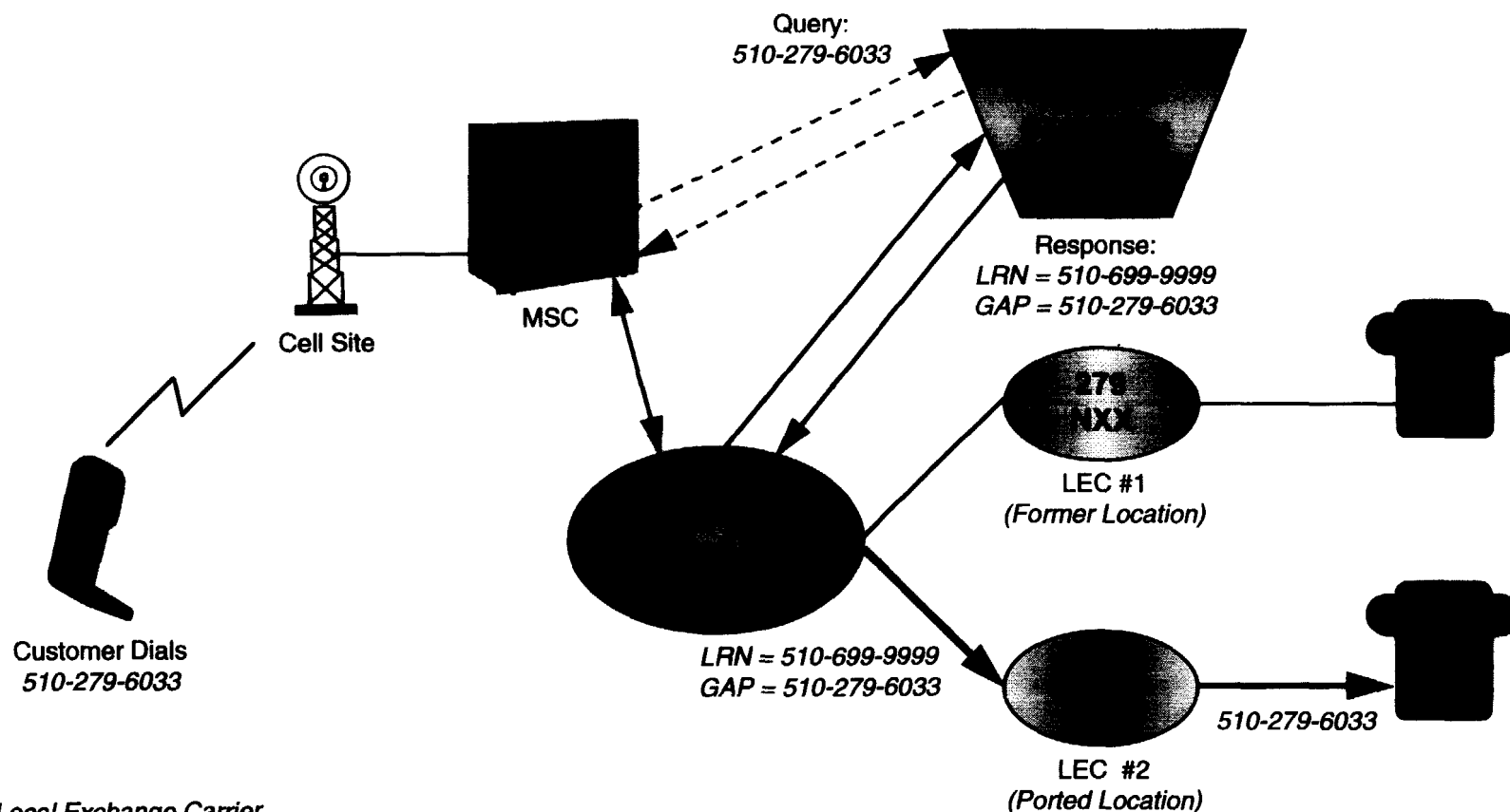
- **Call Routing**
- **Roaming**
- **Fraud**
- **Calling Area**
- **Call Rating / Billing**

. . . many more

Wireless Call Origination to a Ported Wireline Number

■ Call Routing

- SS7 deployment is required for database look-ups
- AIN/IN/WIN provides triggers in the switch to initiate database look-up
- Database look-up required to obtain call routing information



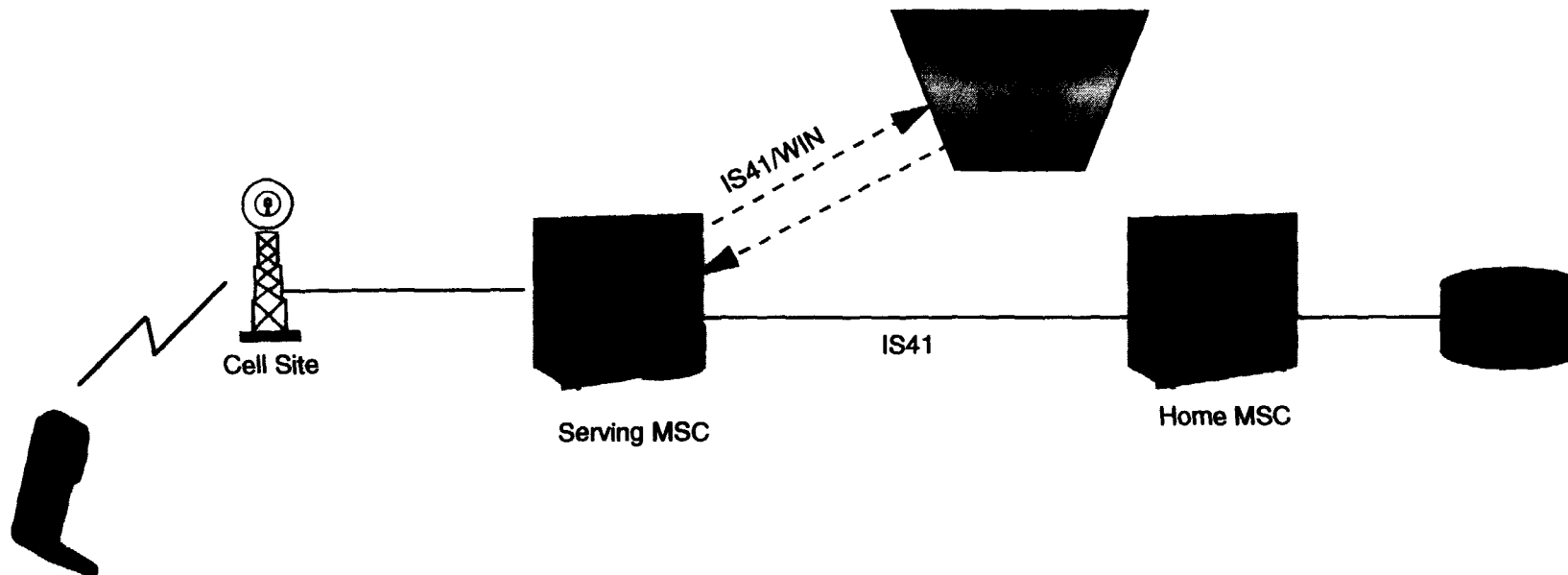
LEC = Local Exchange Carrier
LRN = Location Routing Number
GAP = Generic Address Parameter
MSC = Mobile Switching Center

Roamer with Ported Number Registration

■ Roaming

– Registration / Validation

- Today, home system is identified by first 6 digits of telephone number. With Number Portability, all 10 digits will be required.
- Multiple database dips may be required to identify home systems.



MSC = Mobile Switching Center

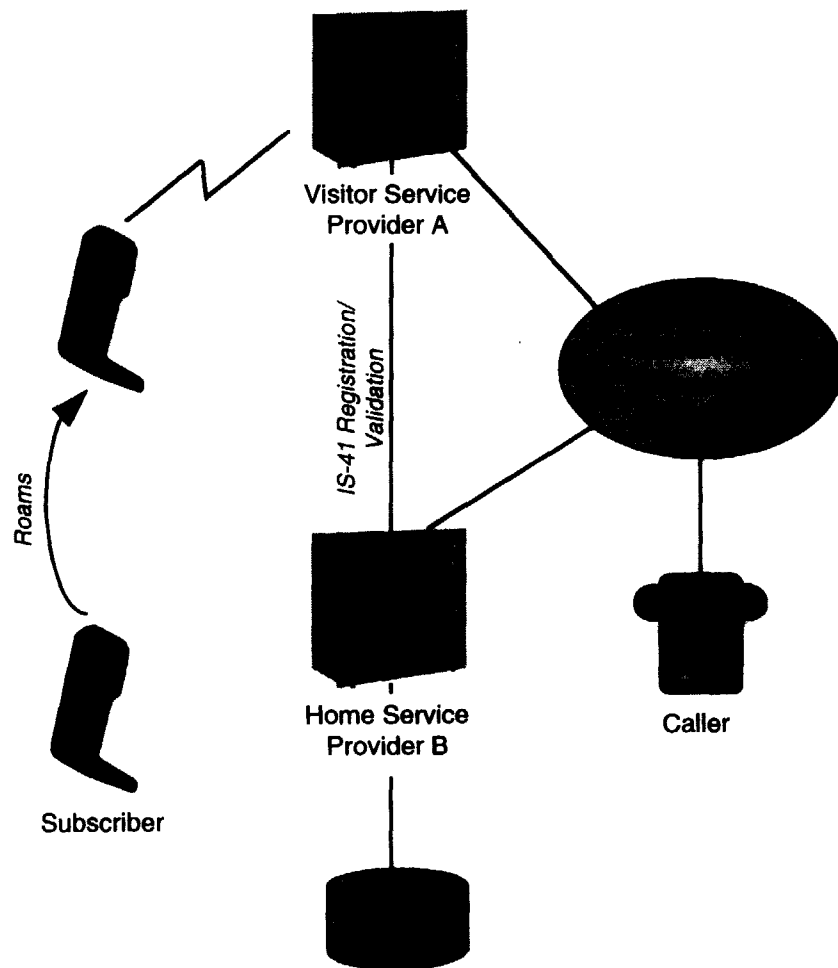
LNPD = Local Number Portability Database

VLR = Visitor Location Register

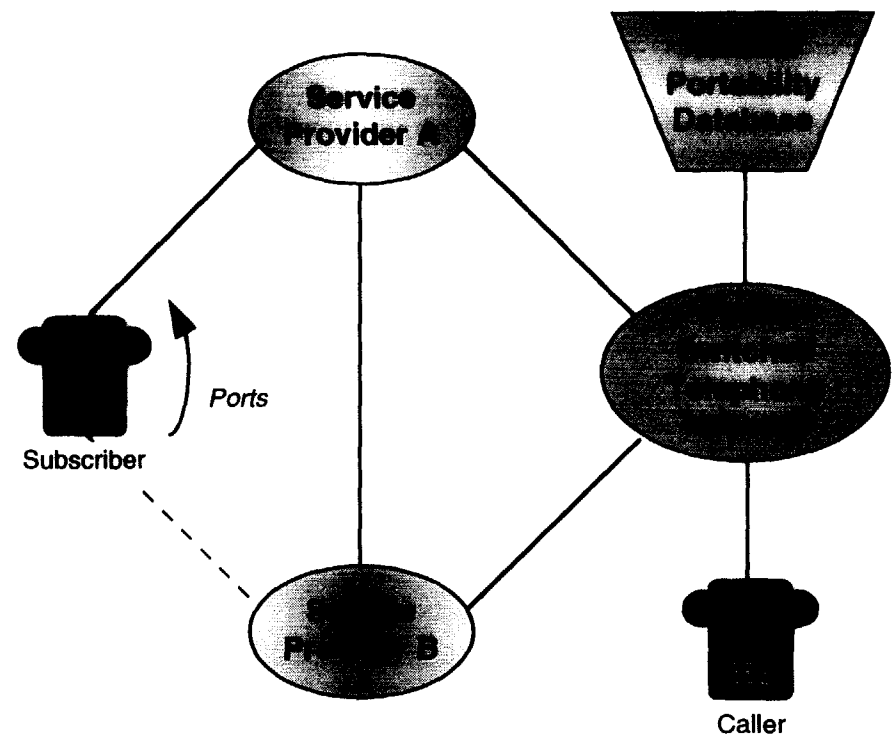
HLR = Home Location Register

Roaming versus Number Portability

Roaming



Number Portability



Roaming versus Number Portability, continued

	Roaming	Number Portability
Service Status	<ul style="list-style-type: none"> Subscriber is the customer of Service Provider B. (B provides billing, validation and other services). Service Provider A provides service to the roaming customer because of business agreement between the two service providers. 	<ul style="list-style-type: none"> Subscriber is the customer of Service Provider A (A provides billing, validation and other services). Service Provider B has no role to play (except to know that NXX is ported).
Time Duration	<ul style="list-style-type: none"> "Temporary" (customer is only visiting area serviced by Service Provider A). 	<ul style="list-style-type: none"> "Permanent" transfer of service provider.
Registration and Validation	<ul style="list-style-type: none"> Visited System A gets validation (approval) from the Home System B (via IS-41 message). Visited System A identifies Home System B based on NPA-NXX of the roaming customer. 	<ul style="list-style-type: none"> No equivalent concept exists.
Roamer Billing	<ul style="list-style-type: none"> Home carrier's bill includes roaming charges. Charging information transferred from Visited System A to the Home System. 	<ul style="list-style-type: none"> No equivalent concept exists.
Call Delivery	<ul style="list-style-type: none"> Incoming calls first routed to the Home System B. Home System knows that customer is in the visited System A (previous registration process). Home System routes the call to the visited system. Roamer pays for applicable toll charges to route the call from the Home System to the visited system. 	<ul style="list-style-type: none"> Incoming calls can be translated at any switch in the call path. Call is routed to the translated address at the appropriate time. Service Provider B ("ported from") has no involvement in this call routing.

Impact on Wireless Networks

■ Fraud

- Many fraud prevention techniques use geographic nature of telephone number (Mobile Identification Number - MIN) to localize fraudulent area.
 - Alternate fraud detection and localization methods will need to be developed.

■ Wireless Calling Area

- Wireless calling areas may cross state boundaries (e.g., AirTouch service in Nevada, California), therefore, a uniform national solution is required.

■ Call Rating / Billing

- Wireless Number Portability may create customer confusion because
 - Wireline and wireless rate areas are different.
 - Competing wireless service providers have different rate areas.
- Today, wireless billing systems bill based on 6-digits NPA-NXX. With Number Portability, billing based on 10-digits is required.
 - Changes will be required to billing systems and intercarrier billing standards.

Conclusions

- **In CC Docket 95-116 FCC should focus on implementation of landline service provider number portability.**
- **Number Portability in the wireless arena not generally as significant because competition already exists for wireless.**
 - Multiple service providers already exists.
 - 2 per area currently, as many as 5 planned for future.
 - Wireless competition not dependent on number portability; customers already change service based on attributes such as, price, coverage, call quality and features.
- **Wireless implementation timelines should be different than wireline due to additional wireless technical issues that need to be addressed.**
 - Call Routing (SS7, WIN deployment)
 - Roaming (Registration / Validation, identification of home system)
 - Fraud (New prevention techniques)
 - Calling Area (Uniform national solution)
 - Call Rating/Billing (Rate area difference)
- **FCC should rely on industry bodies to set specific technical standards.**